

THE RECLAMATION BOARD

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Colonel Ronald N. Light
District Engineer
Sacramento District
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Dear Colonel Light:

The Yuba County Water Agency (YCWA), in the enclosed letter dated March 23, 2007, has requested that The Reclamation Board (Board) assist in their effort to obtain Section 104 credit for flood control work on the Yuba River. This letter is to forward their request. Under Section 104, Public Law (PL) 99-662, a local sponsor constructing a flood control project can receive credit for work that is compatible with a future federal project. The proposed work will be constructed in the area currently being studied by the Yuba River Basin Project: General Reevaluation Report (GRR). For the reasons explained below and in the enclosed letter, the Board believes the work is compatible with the Yuba River Basin Project, and YCWA's request is consistent with the U.S. Army Corps of Engineers' policy regarding Section 104 credit.

With these improvements, YCWA intends to reduce the potential for severe economic loss, the risk to public safety, and address known deficiencies for levees that do not meet current Federal Emergency Management Agency (FEMA) standards for 100-year protection due to seepage concerns.

The activities covered under this Section 104 request include the following:

- Construction of an approximately 5.7 mile setback levee along the Feather River East Levee from Project Levee Mile (PLM) 17.1 to 23.6.

This work is in addition to the work described in our letter dated March 6, 2007.

YCWA has prepared a document titled "Phase 4 Feather River Levee Repair Project, Alternative Analysis Report," which is on file with the Corps' Sacramento District. Environmental documentation prepared by YCWA was finalized in November 2006 and titled "Final Environmental Impact Report for the Feather River Levee Project."

Colonel Ronald N. Light

Page 2

The proposed work is within the scope of the Corps' GRR for the Yuba River Basin Project, and it is anticipated that these improvements will be incorporated into the selected project features. YCWA considers further delays in construction a significant risk to public safety, can create severe economic loss, and considers this risk sufficient reason to move in advance of the congressional authorization. The projected total cost of these improvements, above and beyond the previously approved Section 104 credit limit, is estimated at \$154,300,000.

We respectfully request that the Corps grant Section 104 credit for this urgent work. Additional supporting information, provided by the YCWA for the Section 104 request, is attached. This attachment has not been reviewed for compliance with Corps' policy. If you have any questions, contact me at (916) 574-0609, or your staff may contact Erin Mullin, Project Engineer for the Department of Water Resources' Division of Flood Management, at (916) 574-0363.

Sincerely,

Jay S. Punia
General Manager

Enclosure

cc: Mr. Curt Aikens, General Manager
Yuba County Water Agency
1402 D Street
Marysville, California 95901-4226

Mr. Mark Ellis, Project Manager
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Mr. Ric Reinhardt, TRLIA Program Manager
MBK Engineers
2450 Alhambra Blvd., 2nd Floor
Sacramento, California 95817

March 23, 2007

Jay Punia
The Reclamation Board
3310 El Camino Ave., Suite LL40
Sacramento, CA 95821

Subject: Application for Section 104 Crediting of Local Work on the Reclamation District No. 784 Feather River Levee Segment 2 (Setback Levee) Compatible with the Yuba River Basin Project

Dear Mr. Punia:

This letter is respectfully submitted by the Yuba County Water Agency (YCWA) to the Reclamation Board for crediting of local flood control work on the Reclamation District No. 784 (RD 784) levees. Under Federal law and regulations, Section 104, Public Law 99-662, and ER-1165-2-29, a nonfederal sponsor constructing a flood control project can receive credit for work which is compatible with a future Federal project. Recognizing that The Reclamation Board (Rec Board) is the nonfederal sponsor of the Yuba Basin Project, and that YCWA is the local nonfederal sponsor, YCWA requests the Reclamation Board's assistance in securing Section 104 credit for these proposed levee improvements.

A Section 104 credit request has already been approved by the Assistant Secretary for the Army (Civil Works) on September 18, 2006, for \$21 million. This was for raising and strengthening about one mile of the Yuba River levee from the Union Pacific Railroad to Simpson Lane. This approval is in addition to another credit approval on July 6, 2005, for \$59.9 million. This work included: raising and strengthening approximately two miles of the Yuba River left bank levee from Highway 70 to Simpson Lane; a setback levee on the Bear River, approximately two miles long, from the Feather River to approximately 1,000 feet east of Highway 70; and raising and strengthening of the Bear River levee from Highway 70 upstream to the WPIC. Other Section 104 credit requests were approved in 2004 for \$2.4 million, and in 1996 for \$2.7 million. Construction of the levee improvements included in the approved Section 104 credits was completed in November 2006. Additional levee deficiencies have been identified with the RD 784 Feather River levee, and levee repairs are now proposed to correct portions of these levees. YCWA made a request for \$32.7 million in credit for strengthening the Feather River Segments 1 and 3 on January 23, 2007. This current request is for repair of the remaining segment along the Feather River (Segment 2) with a setback levee.

Engineering and environmental activities for this most recent effort will conform to the appropriate Corps and State guidelines. The proposed improvement, costs, and benefit are presented in the "Phase 4 Feather River Levee Repair Project, Alternatives Analysis Report" (GEI, December 2006). This report is on file with the Department of Water Resources and the Corps, Sacramento District. The activities covered under this Section 104 request include the following:

- Construction of an approximately 5.7 mile setback levee along the Feather River levee from Project Levee Mile (PLM) 17.1 to PLM 23.6.

Attached is a document which describes the proposed improvement in more detail. The cost of the improvement above and beyond the approved and requested Section 104 credit is estimated at \$154.3 million, which would increase the total Section 104 credit to \$273.0 million.

The Corps, in partnership with the State, is in the process of preparing a General Reevaluation Report (GRR) for the Yuba River Basin Project, which includes within its scope the reach of improvement proposed under this Section 104 application. When completed, the GRR may include recommendations that would modify the authorized Yuba River Basin Project to incorporate other levee system improvements in the watershed, such as the one proposed under this application. This reach has been studied in the past and is considered by local and State agencies, as well as the Corps of Engineers, to be in need of improvement to provide the protection needed for an urban area. The Corps' current estimate of damageable property in RD 784 is \$1,065,000,000. The proposed project will address known deficiencies for the levee, which does not currently meet FEMA standards, and will greatly reduce the potential for flood damage to a growing urban area that has flooded twice.

YCWA, RD 784, and the Three Rivers Levee Improvement Authority (TRLIA) will be proactive in resolving the problems identified in this area. Ideally, this needed improvement would be constructed as part of the Yuba River Basin Project. However, given the length of time it will take to get Congressional authorization and appropriations; local agencies will need to proceed in advance of the Yuba River Basin Project to provide the needed protection as soon as is reasonably possible.

As the potential for severe economic loss and risk to public safety is sufficiently high, TRLIA is progressing with designing and constructing the proposed improvement in advance of Congressional authorization. Additional reasons the local agencies have decided to proceed with early implementation of the local project include the following:

- The Corps and TRLIA have determined that the levees do not meet the Sacramento River Flood Control Project design standards. A failure of this levee at or below the design may expose the State to liability for damages.

- This reach of levee had been identified as not meeting criteria for FEMA 100-year certification. This work must be expedited to avoid having RD 784 mapped into the FEMA 100-year floodplain.
- RD 784 levee failures in 1986 and 1997 have led to significant risk to public safety and considerable property damage.
- The improvement is projected to be completed in 2008, at least five years earlier than could be accomplished as a Federal project.
- The improvement is consistent with the objectives established in the Corps'1998 Yuba Basin Feasibility Report (e.g., reduce potential flood damages in urban areas, preserve related environmental and cultural resources in the study area) and will be needed to achieve the benefits identified in that report.

The environmental effects of constructing and maintaining the subject setback levee were disclosed in an environmental document prepared by the TRLIA and the YCWA (Final Environmental Impact Report for the Feather River Levee Project, an element of the Yuba-Feather Supplemental Flood Control Project, November 2006).

Most adverse environmental effects would occur only during the construction phases; and include increases in traffic, air emissions, noise, and loss of native vegetation. Equipment and material staging areas would also result in a short-term disruption to existing land uses. Construction-related air emissions would not exceed *de minimis* thresholds established by the U.S. Environmental Protection Agency. A federal air quality conformity analysis is not required. All other significant environmental effects associated with constructing and maintaining the flood control improvements along the Feather River would be reduced to a less than significant level by implementing appropriate mitigation measures.

TRLIA will obtain a Clean Water Act Section 404 permit for the proposed improvement along the Feather River because the proposed project will result in fill being placed in waters of the United States. The Section 404 permit will include a biological assessment that addresses effects on endangered species located in the project area, including valley elderberry long horn beetle, giant garter snake, and vernal pool invertebrates. This assessment will be used by the USACE as part of their Endangered Species Act consultation with the U.S. Fish and Wildlife Service.

As part of the Section 404 permitting process, the USACE will consult with the State Historic Preservation Office (SHPO) regarding cultural resources that could be disturbed by the project. TRLIA will prepare a historic resources inventory report and submit it to the USACE for use in their consultation with SHPO.

TRLIA recognizes that alteration of the existing Sacramento River Flood Control Project through construction of a setback levee will require approval of the Chief of Engineers through the Section 408 Process. TRLIA will prepare the information required for this approval and will work with the Reclamation Board to request alteration of the Sacramento River Flood Control Project through the Section 408 process.

It is requested that you forward this request to the U.S. Army Corps of Engineers for approval. We expect that the work will be accomplished prior to authorization of a Federal project and will still be a relevant element of the final plan for the adopted Federal project. We will continue to coordinate with you on this matter during the preparation of the GRR for the Yuba River Basin Project. We would appreciate the Corps' addressing the proposed crediting in the decision document recommendations.

MBK Engineers has been working on behalf of YCWA, RD 784, and TRLIA to assist us on this matter. If you have any questions on this application, please contact Mr. Ric Reinhardt at (916) 456-4400. Thank you for your assistance in this matter.

Sincerely,

Curt Aikens

Attachment

cc: Ric Reinhardt
Mark Ellis
Erin Mullin

ATTACHMENT
Three Rivers Levee Improvement Authority
Phase 4 Feather River Levee Repair Project
Segment 2 (Setback Levee)
Information for Section 104 Credit

Project Description

The overall objective of the Phase 4 Feather River Levee Repair Project (FRLRP) is to address through-seepage and underseepage potential in the east levee of the Feather River from the Bear River to the Yuba River, so as to reduce the risk of flooding to developed areas in Reclamation District (RD) 784. This levee has been divided into three segments for the purpose of repair. Segments 1 and 3 will be repaired in 2007, with repair of segment 2 following in 2008 (Figure 1). The information in this attachment will pertain to the request for credit for segment 2.

To achieve the project objective, the Three Rivers Levee Improvement Authority (TRLIA) considered various levee treatment alternatives and determined the most effective in remediating seepage problems in Segment 2 to be a setback levee. The alternatives analysis is presented in the "Phase 4 Feather River Levee Repair Project, Alternatives Analysis Report" (GEI, December 2006). A setback levee was chosen to address through-seepage and underseepage in the Feather River Levee Segment 2, based on the regional flood protection and environmental restoration benefits provided. Also, this reach of the Feather River levee is on an especially troublesome foundation that has exhibited many historic boils and a levee failure in 1997. Constructing a new levee on better foundation materials found east of the existing levee alignment was considered the most reliable levee repair for this reach.

The setback levee will be constructed of low permeability materials and will be approximately 25 feet high with a 20 foot crown and 1:vertical to 3:horizontal sideslope for both the waterside and landside sideslopes. A soil bentonite slurry wall will be constructed in some reaches of the foundation to address underseepage issues. Figure 2 show details of the setback levee construction.

Design and Construction Costs

TRLIA estimates that the total cost to design and construct the Segment 2 setback levee for the Feather River will be \$154,300,000. These costs are displayed in Table 1.

Table 1 – Design and Construction Costs

Element	% of Total Cost	Cost
Construction	34%	\$52,900,000
Contingency	9%	14,000,000
Change Orders	9%	13,200,000
Sub-Total		80,100,000

Environmental Mitigation	2%	2,900,000
Planning, Engineering, & Regulatory Permitting	5%	7,700,000
Construction Management	3%	4,800,000
Right of Way Acquisition	33%	50,800,000
Environmental Restoration	5%	8,000,000
Total		154,300,000

Environmental Effects

As indicated in Table 2, The Segment 2 setback levee would result in environmental related impacts to geology and soils, water resources, fish and wildlife, cultural and paleontological resources, transportation, air quality, noise, and hazardous materials. With appropriate mitigation, all of these impacts would be reduced to a less than significant level.

Economics

The Feather River east levee is part of a program of levee improvements being implemented by TRLIA to provide 200-year protection to approximately 29,000 acres of mixed agricultural, residential, and commercial development in RD 784. As of 2006, there are approximately 2,000 commercial and industrial structures, and over 12,500 residences that would be protected by the TRLIA Project. Over 30,000 people in Linda and Olivehurst currently work and reside in the protected area; and the Plumas Lake and East Linda Development areas are bringing more people to live in this area. Highway 70 runs through the protected area, as well as a portion of the Union Pacific Railroad. These structures have an estimated replacement value of approximately \$1.1 billion. The segment 2 setback levee is a part of an ongoing program to provide 200-year protection to RD 784. Recent economic analyses of this program determined that it would have a total cost of \$355,600,000 and a net benefit of \$788,700,000, including environmental restoration, with a benefit to cost ratio of 3.2 to 1.

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 Land Use ASB-5.1-a: Conflicts with Land Use Planning and Policies Resulting from Levee Repairs and the Levee Setback.	S	Resolve Inconsistencies between Proposed Uses of the Levee Setback Area and Yuba County Zoning. TRLIA shall coordinate with the County Planning Department to appropriately address inconsistencies between proposed land uses and County-planned land uses and zoning designations. Before permanent changes in allowable land uses in the levee setback area need to be established (i.e., before degradation of the existing levee at the latest), TRLIA shall apply for a general plan amendment, if necessary, and for appropriate rezoning, a zoning amendment, or other measures determined by the Planning Department to be necessary to ensure the consistency of proposed land uses with zoning.	SU
ASB-5.1-b: Conversion of Important Farmland to Nonagricultural Uses Resulting from Levee Repairs and the Levee Setback.	S	Preserve the Agricultural Productivity of Important Farmland to the Extent Feasible. It is not known at this time whether lands in the levee setback area would be retained in agricultural production, converted to habitat, or a mixture of both land uses. If lands classified as Important Farmland in the levee setback area are to be retained in agricultural production, the following measures would apply to these lands to the extent feasible and practicable: <ul style="list-style-type: none"> (a) When selecting sites for borrow excavation, minimize the fragmentation of lands that are to remain in agricultural use. Where practical, retain contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production. (b) Where the setback levee would transect agricultural properties and the continuation of agricultural use on the portions within the levee setback area would occur, ensure convenience of access to the levee setback properties 	SU

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>sufficient to support ongoing agricultural operations.</p> <p>(c) Make the most productive salvaged topsoil from the levee footprint available to landowners with less productive agricultural lands in the vicinity of, but outside the levee setback area that could benefit from the introduction of good-quality soil.</p> <p>(d) Ensure that utilities currently in the levee setback area that are needed for ongoing agricultural uses, including wells, pipelines, and power lines, are appropriately relocated, replaced, or retrofitted to withstand flooding. Ensure that these systems and drainage systems are functioning as necessary after the project is in place so that agricultural uses are not unduly disrupted.</p> <p>In addition, TRLIA shall ensure that the following measures are implemented, to the extent feasible and practical, inside and/or outside the levee setback area:</p> <p>(a) Minimize the disturbance of Important Farmland and continuing agricultural operations during construction by locating construction laydown and staging areas on sites that are fallow, that are already developed or disturbed, or that are to be discontinued for use as agricultural land, and by using existing roads to access construction areas to the extent possible.</p> <p>(b) When selecting the site and configuration of the detention basin, minimize the fragmentation of agricultural lands and retain contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production.</p>	
ASB-5.1-c: Displacement of Existing Housing in the Levee Setback Area.	LTS	No mitigation is required.	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.2 Geology, Soils, and Mineral Resources			
ASB-5.2-a: Risk of Geologic Hazards to the Levees.	B	No mitigation is required.	B
ASB-5.2-b: Soil Erosion Hazards Associated with Construction of the ASB Setback Levee.	LTS	No mitigation is required.	LTS
ASB-5.2-c: Soil Erosion Hazards Associated with Flood Operations with the ASB Setback Levee.	LTS	No mitigation is required.	LTS
5.3 Water Resources and River Geomorphology			
ASB-5.3-a: Temporary Effects on Water Quality Associated with Levee Repair and Strengthening Activities and Setback Levee Construction.	PS	Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. Before the start of any project construction work, site grading, or excavation, TRLIA, or its primary construction contractor, shall prepare a SWPPP detailing measures to control soil erosion and waste discharges from construction areas and shall submit an NOI to the Central Valley RWQCB for stormwater discharges associated with general construction activity. TRLIA shall require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor(s) and subcontractor(s) conducting the work shall be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.	LTS
ASB-5.3-b: Disruption of Local Drainage Systems by the Levee Setback.	S	Coordinate with RD 784 to Modify Drainage Facilities that Would Be Affected by the Levee Setback and Ensure Appropriate Functioning of the Local Drainage System. TRLIA or its primary construction contractor shall coordinate with RD 784 to evaluate local drainage needs before and after construction of the setback levee and shall prepare and implement a plan for modification of the portion of the drainage	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
ASB-5.3-c: Changes in Local Flood Hydrology Resulting from the Levee Setback.	B	No mitigation is required.	B
ASB-5.3-d: Changes in Flood Hydrology Downstream of the Setback Levee.	LTS	No mitigation is required.	LTS
ASB-5.3-e: Change in Water Demand and Available Water Supply Resulting from the ASB Levee Setback.	B	No mitigation is required.	B
ASB-5.3-f: Changes in Groundwater Levels Resulting from Installation of the Levee Setback.	LTS	No mitigation is required.	LTS

Table 2 SUMMARY OF IMPACTS AND MITIGATION MEASURES FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2			
Impacts	Mitigation Measures	Level of Significance After Mitigation	Level of Significance Before Mitigation
ASB-5.3-g: Long-Term Effects on Water Quality Resulting from the Levee Setback.	<p>PS</p> <p>(1): Conduct a Phase I Environmental Site Assessment for the Levee Setback Area and Implement Recommendations. Before the start of any ground-disturbing construction activity, TRLIA or its primary construction contractor shall have a qualified hazardous waste specialist perform a Phase I Environmental Site Assessment of the levee setback area to identify potential sources of surface and buried contaminants, and provide a report of assessment findings. TRLIA or its construction contractor(s) shall implement recommendations made in the Phase I report.</p> <p>(2): Evaluate Levee Borrow Material for Potential Contaminants in Coordination with the RWQCB. Before the start of construction, TRLIA or its primary construction contractor shall have a qualified hazardous materials specialist collect and evaluate representative soil samples from the existing levee sections that would be used as sources of borrow, and from potential borrow sites. The soil samples shall be evaluated for contaminant residues (e.g., trace metals, organochlorine pesticides, polychlorinated biphenyls) that may be encountered in excavation and grading activities. Wastes that are encountered at hazardous levels shall be treated in accordance with CCR Title 22 procedures for hazardous materials reporting and disposal. Where the evaluation of soil samples detects the presence of wastes that are not present at hazardous levels, the results of the evaluation shall be reported to the RWQCB for classification in the RWQCB's designated waste classification program, and the RWQCB will determine the acceptability of the material for levee construction based on the potential of the waste to impair water quality and public health.</p> <p>(3): Remove Nonhazardous Waste and Debris from the Levee Setback Area. Before the beginning of the first season of potential flood operations with the setback levee in place, TRLIA</p>	LTS	

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		or its primary construction contractor shall ensure the removal from the levee setback area of all large slash and wood piles, nonhazardous waste dumps, and other nonhazardous debris that could adversely affect water quality or create a hazard if carried downriver in flood flows.	
ASB-5.3-h: Changes in Floodplain Sediment Deposition Associated with the Levee Setback.	LTS	No mitigation is required.	LTS
ASB-5.3-i: Changes in Geomorphic Processes Along the River Channels Resulting from the Levee Setback.	LTS	No mitigation is required.	LTS
ASB-5.3-j: Changes in Geomorphic Processes Along the Project Levees Resulting from the ASB Levee Setback.	LTS	No mitigation is required.	LTS
5.4 Fisheries			
ASB-5.4-a: Loss of Fish Habitat during Levee Repair and Strengthening Activities and Setback Levee Construction. Construction-related increases in sediments, turbidity, and contaminants could adversely affect fish habitats immediately adjacent to and downstream of project construction activities, possibly resulting in adverse effects on fish species listed or proposed for listing as threatened or endangered under ESA. This impact would be potentially significant.	PS	(1): Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. This measure is identical to Mitigation Measure ASB-5.3-a in Section 5.3, "Water Resources and River Geomorphology." (2): Obtain and Comply with Terms and Conditions of a Streambed Alteration Agreement for Construction Activities Associated with the Setback Levee. TRLLA or its representative shall consult with DFG regarding potential disturbance to fish habitat as part of the process for obtaining a streambed alteration agreement, pursuant to Section 1602 of the California Fish and Game Code, for construction work associated with the setback levee. TRLLA shall comply with conditions set forth in the streambed alteration agreement to protect fish habitat.	LTS
ASB-5.4-b: Loss of Overhead Cover and Instream Woody Material Associated with	LTS	No mitigation is required.	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
ASB-5.4-c: Effects on Habitat from Contaminants in Borrow Material. Setback Levee Construction.	PS	<p>(1): Conduct a Phase I Environmental Site Assessment for the Levee Setback Area and Implement Recommendations. This measure is identical to Mitigation Measure ASB-5.3-g(1) in Section 5.3, "Water Resources and River Geomorphology."</p> <p>(2): Evaluate Levee Borrow Material for Potential Contaminants in Coordination with the RWQCB. This measure is identical to Mitigation Measure ASB-5.3-g(2) in Section 5.3, "Water Resources and River Geomorphology."</p> <p>(3): Remove Nonhazardous Waste and Debris from the Levee Setback Area. This measure is identical to Mitigation Measure ASB-5.3-g(3) in Section 5.3, "Water Resources and River Geomorphology."</p>	LTS
ASB-5.4-d: Fish Stranding Following Flooding of the Levee Setback Area.	S	<p>Develop and Implement a Drainage and Grading Plan that Minimizes Loss or Incidental Loss of Fish from Stranding.</p> <p>TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize the potential for fish stranding in the levee setback area:</p> <p>(a) Plan and implement drainage improvements. TRLIA or its designated construction contractors, through a combination of grading and drainage improvements, shall minimize the potential for floodwater to pond in the levee setback area in such a way that substantial numbers of fish become stranded and consequently become exposed to hostile environments (warm water temperatures and increased predation).</p> <p>Before the design of the setback levee and levee setback area is finalized, TRLIA or its representatives shall obtain the approval of DFG and NMFS indicating that the planned drainage and grading features are sufficient to address concerns about fish stranding potential.</p>	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		(b) Monitor the success of the drainage features and adjust if necessary. A long-term mitigation monitoring plan shall be developed by a qualified biologist on behalf of TRLIA and shall be approved by DFG and NMFS before implementation of the levee setback. This monitoring plan shall evaluate the effectiveness of the grading and drainage features in the levee setback area in reducing the risk of fish stranding and the stability of the drainage features and shall determine the need for maintenance or modification. Following each flood season (i.e., after April 16), a letter report shall be submitted to NMFS and DFG summarizing the overall condition of the floodplain area and any changes that have occurred from the previous year(s). If any remediation measures are required, they shall be outlined in the letter report, along with a schedule specifying when the remediation activities will occur.	
ASB-5.4-e: Increased Aquatic and Riparian Habitat in the Levee Setback Area.	PB	The performance of the mitigation measure shall be considered successful if there is no isolated standing water and/or barriers to fish passage capable of resulting in substantial fish stranding following a flood event that inundates the levee setback area.	PB
5.5 Terrestrial Biological Resources	LTS	No mitigation is required.	LTS
ASB-5.5-a: Effects on General Biological Resources.			

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
ASB-5.5-b: Effects on Sensitive Habitats.	S	<p>Avoid Disturbance of Sensitive Habitats to the Extent Feasible and Comply with Corps and DFG Processes to Mitigate Unavoidable Effects. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on sensitive habitats.:</p> <ul style="list-style-type: none"> (a) Map potential waters of the United States and riparian habitat in the project area and, to the extent feasible and practicable, plan project features and construction activity to avoid direct effects on these areas. (b) Complete the Section 404 permitting process, and mitigate the acreage of affected jurisdictional wetland on a “no-net-loss” basis. (c) Obtain a streamlined alteration agreement from DFG and mitigate affected riparian habitat on a “no-net-loss” basis. 	LTS
ASB-5.5-c: Loss of Special-Status Plants.	PS	<p>Conduct Detailed Special-Status Plant Surveys and Establish Construction Buffers as Necessary to Minimize Effects on Special-Status Plants. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on special-status plants:</p> <ul style="list-style-type: none"> (a) Conduct detailed special-status plant surveys and document the results. (b) Establish buffers wherever possible to protect identified special-status plants from construction activity. (c) Compensate for losses of special-status plants. 	LTS
ASB-5.5-d: Effects on Valley Elderberry Longhorn Beetle.	PS	<p>Conduct Protocol-Level Surveys, Establish Buffers, and Implement a Mitigation Plan as Necessary to Minimize Effects on Valley Elderberry Longhorn Beetle. TRLIA and its primary contractors for engineering design and construction shall</p>	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
ASB-5-e: Effects on Northwestern Pond Turtle.		<p>ensure that the following measures are implemented to minimize potential project effects on valley elderberry longhorn beetles:</p> <ul style="list-style-type: none"> (a) <u>Conduct protocol-level elderberry shrub surveys in the project area.</u> (b) Protect elderberry shrubs from disturbance. (c) If effects on shrubs cannot be avoided, develop and implement a mitigation plan approved by USFWS. 	LTS
ASB-5-f: Effects on Giant Garter Snake.	PS	<p>Conduct Surveys as Part of Dewatering Activities and Minimize Effects on Northwestern Pond Turtle. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on northwestern pond turtles:</p> <ul style="list-style-type: none"> (a) Conduct surveys after dewatering. (b) Capture and move turtles. 	LTS
	S	<p>Implement Applicable Take Minimization Measures and a Mitigation Plan as Necessary for Giant Garter Snake. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on giant garter snakes:</p> <ul style="list-style-type: none"> (a) Verify potential habitat in the project area and, to the extent feasible and practicable, plan project features and construction activity to avoid direct effects on these areas. (b) Designate areas to be avoided during construction. The primary engineering and construction contractors, through coordination with the biologist, shall designate giant garter snake habitat to be avoided during project construction as Environmentally Sensitive Areas. These areas shall be flagged by the biologist and avoided by all construction personnel. 	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>(c) Limit the timing of construction activity within potential habitat.</p> <p>(d) Follow guidelines for habitat dewatering.</p> <p>(e) Inspect suitable habitat within 24 hours of beginning construction.</p> <p>(f) Minimize clearing of wetland vegetation.</p> <p>(g) Restrict movement of equipment.</p> <p>(h) Participate in environmental awareness program.</p> <p>(i) Restore disturbed areas.</p> <p>(j) If impacts cannot be avoided, develop and implement a feasible mitigation plan approved by USFWS.</p>	
ASB-5-g: Effects on Swainson's Hawk and Other Nesting Raptors.	PS	<p>(1): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Swainson's Hawk. TRLIA and its primary construction contractor shall ensure that the following measures are implemented to minimize potential project effects on Swainson's hawk:</p> <p>(a) Conduct preconstruction surveys.</p> <p>(b) Establish protective buffers around active nests.</p> <p>(2): Conduct Preconstruction Surveys, Protect Occupied Burrows, and Relocate Individuals as Necessary to Minimize Effects on Burrowing Owl. TRLIA and its primary construction contractor shall ensure that the following measures are implemented to minimize potential project effects on burrowing owl:</p> <p>(a) Conduct preconstruction surveys.</p> <p>(b) Establish protective buffers around occupied burrows.</p> <p>(c) Relocate owls if necessary.</p> <p>(3): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Other Nesting Raptors. TRLIA</p>	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		and its primary construction contractor shall ensure that the following measures are implemented to minimize potential project effects on other nesting raptors: (a) Conduct preconstruction surveys. (b) Establish protective buffers around active nests.	
ASB-5.5-h: Effects on Other Special-status Birds.	LTS	No mitigation is required.	LTS
ASB-5.5-i: Effects on Pacific Western Big-Eared Bat.	LTS	No mitigation is required.	LTS
ASB-5.5-j: Effects on Wildlife Corridors.	LTS	No mitigation is required.	LTS
5.6 Recreation			
ASB-5.6-a: Temporary Changes in Recreational Opportunities during Levee Repairs and Setback Levee Construction.	LTS	No mitigation is required.	LTS
ASB-5.6-b: Long-Term Changes in Recreational Opportunities Resulting from Levee Repairs and Setback Levee Construction.	LTS	No mitigation is required.	LTS
5.7 Aesthetic Resources			
ASB-5.7-a: Temporary Changes in Visual Resources Associated with Levee Repairs and Setback Levee Construction.	LTS	No mitigation is required.	LTS
ASB-5.7-b: Changes in Light and Glare.	LTS	No mitigation is required.	LTS
ASB-5.7-c: Long-Term Modifications of Views from Levee Repairs and Installation of the Setback Levee.	LTS	No mitigation is required.	LTS
5.8 Cultural Resources			
ASB-5.8-a: Damage to or Destruction of	PS	Evaluate the Significance of Archaeological Site CA-Yub-5 and, If Determined to Be Significant, Protect the Site from	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Prehistoric Archaeological Site CA-Yub-5.	PS	Damage and/or Conduct Data Recovery Excavation. (1): Conduct Further Evaluation and Subsurface Testing to Determine Whether Proposed Levee Improvements Could Damage Significant Resources Associated with Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. (2): Monitor Ground-Disturbing Activities in the Vicinity of Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14.	LTS
ASB-5.8-b: Damage to or Destruction of Cultural Resources in Unsurveyed Areas.	PS	Survey Unexamined Areas before Project Ground-Disturbing Activities and Implement Further Mitigation As Necessary.	LTS
ASB-5.8-d: Damage to or Destruction of Undocumented Buried Archaeological Resources during Construction.	PS	Stop Work and Implement Measures to Protect Archaeological Resources If Discovered during Ground-Disturbing Activities.	LTS
ASB-5.8-e: Damage to or Destruction of Undocumented Human Remains during Construction.	PS	If Human Remains are Discovered during Ground-Disturbing Activities, Stop Work and Comply with State Laws Pertaining to the Discovery of Human Remains.	LTS
5.9 Air Quality	S	Implement FRAQMD Pollution-Control Measures to Minimize Temporary Emissions of ROG, NO _x , and PM ₁₀ during Construction.	SU
ASB-5.9-a: Temporary Emissions of ROG, NO _x , and PM ₁₀ during Construction.		<ul style="list-style-type: none"> 1. Implement a Fugitive Dust Control Plan 2. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0 ("Visible Emissions") limitations (40% opacity or Ringelmann 2.0). 3. The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation. 4. Limit vehicle and equipment idling times to 10 minutes— saves fuel and reduces emissions. 	

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>5. Use existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.</p> <p>6. Develop and implement a traffic plan to minimize traffic flow interference from construction activities.</p> <p>7. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require ARB Portable Equipment Registration with the state or a local district permit.</p> <p>8. The proponent shall assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, and emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for the construction project and apply the following mitigation measure:</p> <p><i>Reducing NO_x emissions from off-road diesel powered equipment</i></p> <p>The project shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a projectwide fleet-average 20% NO_x reduction and 45% particulate reduction compared to the most recent ARB fleet average at time of construction.</p>	
ASB-5.9-b: Long-Term Changes in Emissions of ROG, NO _x , and PM ₁₀ Associated with Levee Repairs and Strengthening and the Levee Setback.	PB	No mitigation is required.	PB

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
ASB-5.9-c: Exposure of Sensitive Receptors to Toxic Air Emissions.	LTS	No mitigation is required.	LTS
5.10 Noise			
ASB-5.10-a: Temporary Increase in Noise Levels during Construction.	S	Limit Generation of Noise by Equipment during Project Construction. (a) To the extent practicable, limit timing of construction activities. (b) All construction equipment shall be properly maintained and equipped with noise control, such as mufflers, in accordance with manufacturers' specifications. (c) To the extent feasible, the simultaneous operation of construction equipment within 50 feet of the project boundary shall be limited. (d) Before construction at each site near noise-sensitive receptors, TRLLA shall provide written notification to potentially affected receptors, identifying the type, duration, and frequency of construction operations.	SU
ASB-5.10-b: Exposure of Sensitive Receptors to Excessive Groundborne Vibration During Construction.	LTS	No mitigation is required.	LTS
5.11 Transportation and Circulation			
ASB-5.11-a: Increase in Traffic on Local Roadways near the Existing Levee and Setback Levee Alignment during Construction.	LTS	No mitigation is required.	LTS
ASB-5.11-b: Increase in Traffic Hazards on Local Roadways near the Existing Levee and Setback Levee Alignment during Construction.	PS	Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. To reduce hazards to vehicles on local roadways, TRLLA shall ensure that its primary construction contractor implements the following measures:	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		(a) Develop and implement a traffic safety plan in coordination with the County and Caltrans. (b) Minimize the accumulation of mud and dirt on local roadways.	
5.12 Public Services, Utilities, and Service Systems			
ASB-5.12-a: Damage of Public Utility Infrastructure and Disruption of Service in the Levee Repair and ASB Levee Setback Areas.	PS	<p>Coordinate with Utility Providers to Remove, Reinforce, and Modify Public Utility Infrastructure in the ASB Levee Setback Area and Prevent Damage of Facilities. TRLLA, the design engineers, or the primary construction contractor for the levee setback, as appropriate, shall implement the following measures before the beginning of construction to ensure that the levee setback does not adversely affect public utility infrastructure or result in interruption of utility service:</p> <p>(a) Coordinate with PG&E to protect electrical lines that cross the levee setback area. (b) Ensure that all utility lines in the setback area have been identified and removed or reinforced as necessary.</p>	LTS
ASB-5.12-b: Damage of Water Supply and Drainage Facilities and Interference with Service in the Levee Repair and ASB Levee Setback Areas.	LTS	No mitigation is required.	LTS
ASB-5.12-c: Potential for Conflicts with Emergency Response Vehicles during Construction.	PS	Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. This measure is identical to Mitigation Measure ASB-5.11-b, "Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways," in Section 5.11, "Transportation and Circulation."	LTS
5.13 Paleontological Resources			
ASB-5.13-a: Disturbance of Unknown	PS	Conduct Training for Construction Personnel, Cease Work if	LTS

Table 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FEATHER RIVER LEVEE REPAIR PROJECT - SEGMENT 2

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Paleontological Resources during Earthmoving Activities.		<p>Conduct Training for Construction Personnel, Cease Work if Paleontological Resources are Encountered, and Implement an Appropriate Mitigation Strategy. TRLJA or its primary construction contractor shall implement the following measures:</p> <p>(a) Before the start of construction activities, construction personnel involved with earthmoving activities shall be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures should fossils be encountered.</p> <p>(b) If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work within at least 25 feet of the find. TRLJA shall retain a qualified paleontologist to evaluate the resource and prepare a proposed mitigation plan in accordance with SVP guidelines (1995).</p>	
Cumulative Impacts		<p>Construction of the setback levee would also contribute to significant cumulative impacts related to conversion of Important Farmland to nonagricultural uses; emissions of ROG, NO_x, and PM₁₀ during construction; and potentially noise during construction. The mitigation described above would not reduce the project's contributions to these impacts to less-than-significant levels.</p>	<p>B = Beneficial effect PB = Potentially beneficial effect NI = No impact</p> <p>LTS = Less than significant PS = Potentially significant S = Significant</p>

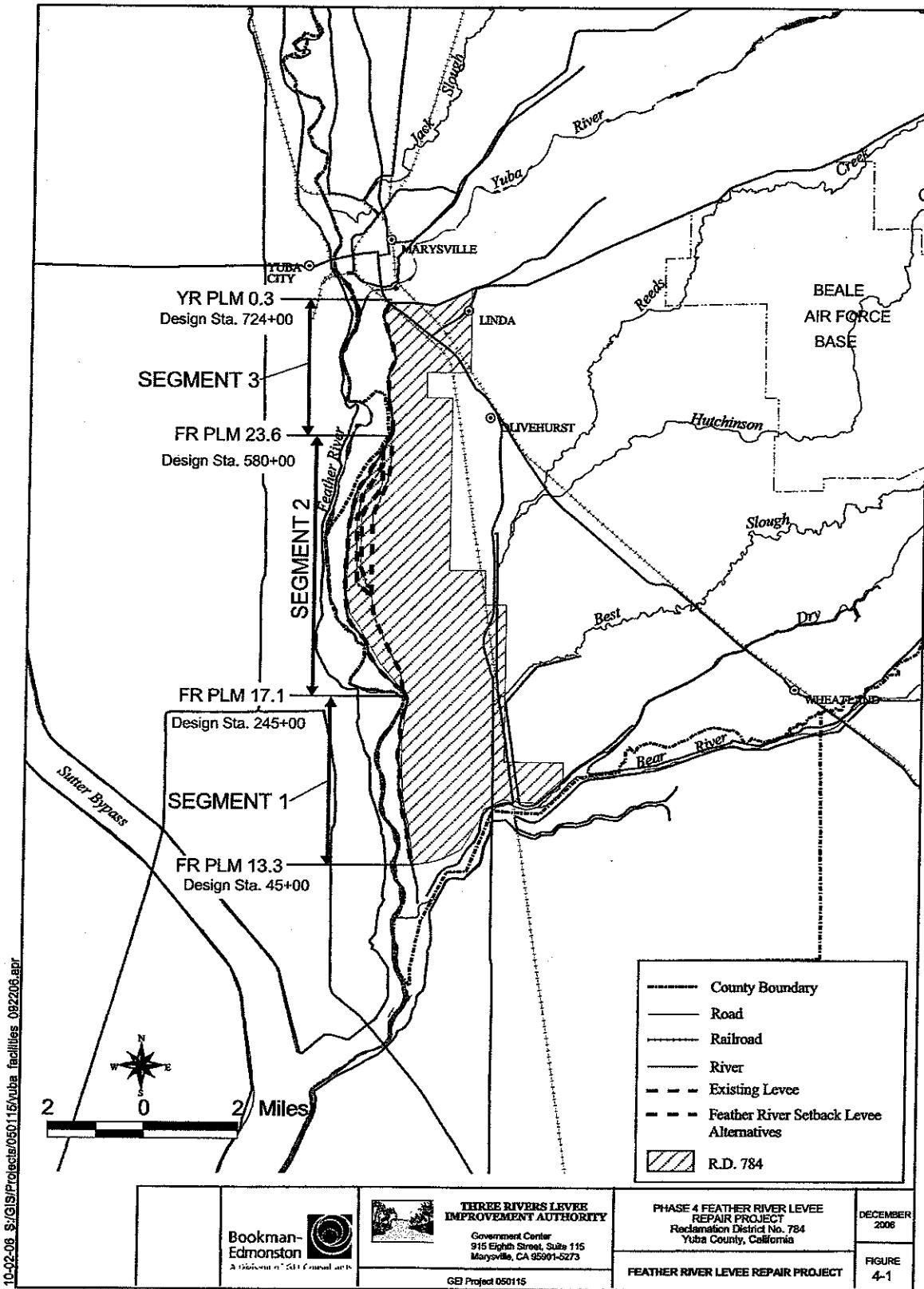


FIGURE 1 – PROJECT LOCATION

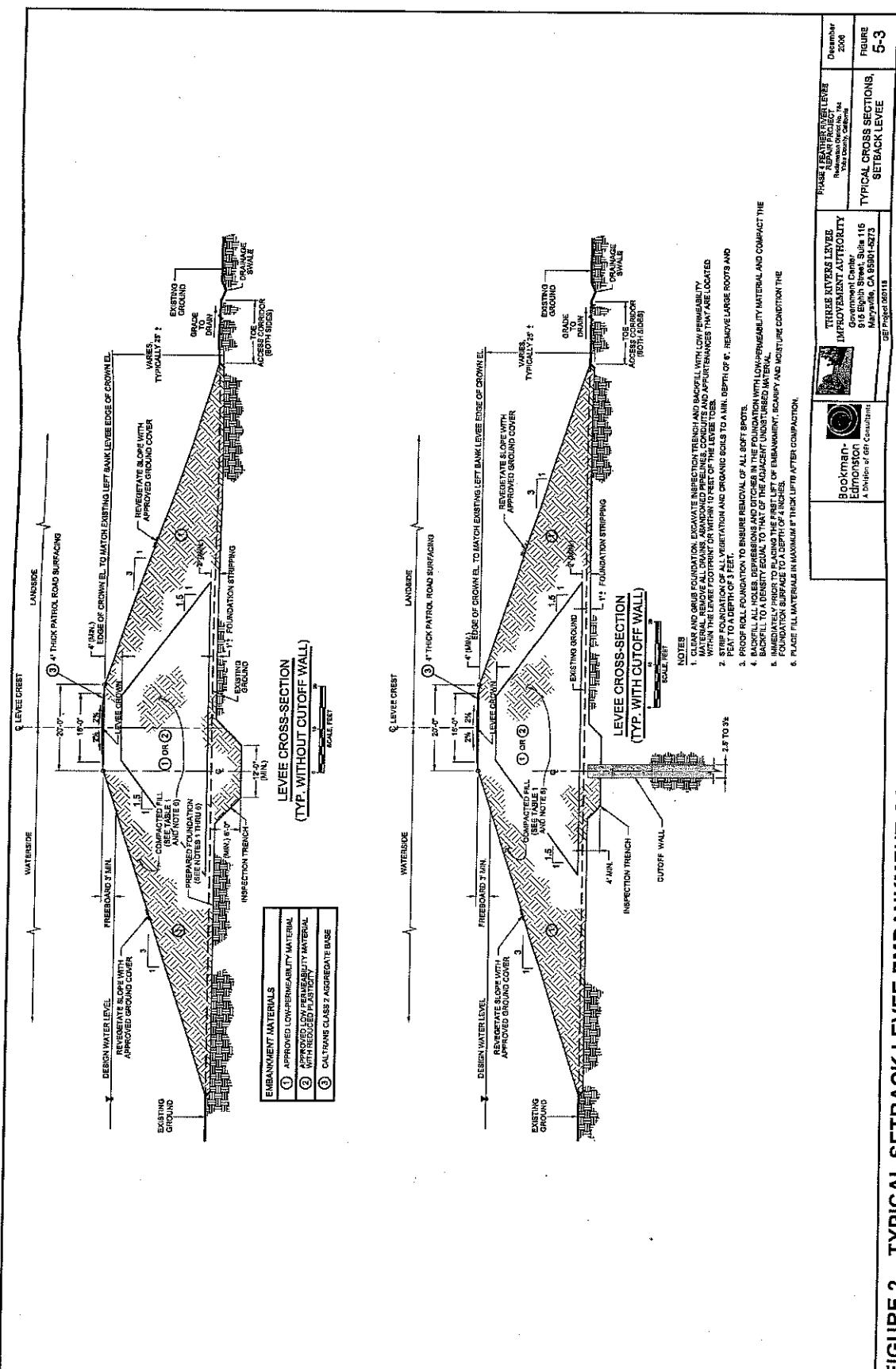


FIGURE 2 – TYPICAL SETBACK LEVEE EMBANKMENT CONSTRUCTION